

### ABSTRACT OF THE DISCLOSURE

A vacuum deposition process for depositing powdered phosphor on fiber optic face plates, such as the output fiber optic window of gated image intensifiers. The process involves resistive heating vacuum deposition of a powdered phosphor, such as Zn, Cd, (S) to a thickness of 7900 Angstroms, for example, after which it is annealed which promotes a columnar growth and makes the phosphor efficient. The thus annealed phosphor can then be directly overcoated with aluminum of a thinner coating than over a powdered phosphor produced by prior known methods due to the smoother surface produced by this process.